STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING

RICK SNYDER
GOVERNOR

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DIRECTOR

April 21, 2015

Mr. James Saric
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard (SR-6J)
Chicago, Illinois 60604-3507

Dear Mr. Saric:

SUBJECT: Comments for the Draft Proposed Plan – May 2015, Allied Paper/Portage Creek/Kalamazoo River – Operable Unit 5, Area 1, Kalamazoo, Michigan

The Michigan Department of Environmental Quality (MDEQ) has reviewed the draft version of the Proposed Plan prepared by the United States Environmental Protection Agency (U.S. EPA) for Area 1 of Operable Unit 5 (OU5) of the Allied Paper/Portage Creek/Kalamazoo River Superfund Site. Overall, the MDEQ concurs with the U.S. EPA's selection of Sediment Alternative S-3A and Floodplain Soil Alternative FPS-4A as the proposed measures to remediate polychlorinated biphenyl (PCB) contamination in Area 1 of OU5.

In our review of the document, the MDEQ noted numerous factual issues related to the draft Proposed Plan that require additional clarification. These detailed comments are enclosed for your consideration during the preparation of the final document.

Finally, as the Proposed Plan is finalized, a great deal of uncertainty exists regarding how the proposed remedial options will actually affect PCB fish tissue concentrations over time. That is why the MDEQ asserts that it is vitally important to put in place a robust monitoring program in order to understand changes over time. The MDEQ also supports that some of the additional data collection efforts proposed in the Feasibility Study will inform our understanding of site conditions that will also be useful for consideration during final selection and design of remedial activities in Area 1. Ultimately, it is the long-term effect of the work conducted in Area 1 on reducing PCB fish tissue concentrations that is the objective. Our ability to document that reductions in PCB concentrations are occurring must be informed by adequate monitoring data.

The MDEQ seeks to preserve its ability to continue furthering key concerns where appropriate in the upcoming Remedial Design stages of the process. The MDEQ appreciates the opportunity to have reviewed and commented on the draft Proposed Plan and looks forward to continued progress for Area 1. If there are any questions in regard to the MDEQ's comments related to the review of the document, please contact me at

517-284-5072; bucholtzp@michigan.gov; or MDEQ, Remediation and Redevelopment Division, P.O. Box 30426, Lansing, Michigan 48909-7926.

Sincerely,

Paul Bucholtz
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Site Assessment and Site Management Unit
Superfund Section
Remediation and Redevelopment Division
517-284-5072

Enclosure
cc/enc: Mr. Todd King, CDM Smith
Ms. Rebecca Frey, U.S. EPA
Mr. Samuel Borries, U.S. EPA
Mr. Michael Berkoff, U.S. EPA
Mr. David Kline, MDEQ
Ms. Daria W. Devantier, MDEQ
Mr. Eric Alexander, MDEQ
Mr. John Bradley, MDEQ

MDEQ Comments on Draft U.S. EPA Proposed Plan – May 2015
Allied Paper/Portage Creek/Kalamazoo River – Operable Unit 5, Area 1
Kalamazoo, Michigan

Specific Comments

Various – The document includes no assessments of Portage Creek (it is not on maps or in tables). The Portage Creek area should be acknowledged in the Proposed Plan (PP).

Page 2 – Include a complete list of all the repositories and not just Kalamazoo Public Library.

Page 3 – Area 1 Subdivided bullets. The text refers to OU5, Area 1, and the subunits. The reference to River Mile measurements should be put in a separate sentence to avoid confusion about the boundaries of Area 1. Also, a Portage Creek reference should also be included.

For the following comments, it is acknowledged that much of the language is copied from the approved Feasibility Study, but some modifications to the language are necessary and will be helpful to the reader.

Page 4 – Past Site Investigations, 1st paragraph – Clarify that Superfund investigations began in 1993. Other state investigations were conducted prior to 1993.

Page 4 – Past Site Investigations, 1st paragraph – "15,000 samples" is not consistent with Table 3-1 in the SRI, which only identifies "5,913 samples." Verify these facts.

Page 4 – Past Site Investigations, 1st paragraph – This section mentions work performed under state lead. Additionally, within the chronology, add the lead change to the U.S. EPA in 2002, as data are also discussed from that time frame.

Page 4 – Past Site Investigations, 2nd paragraph – The 1993/94 data were not sufficient for developing trends. The 2000 supplemental data were collected independently by the PRPs without agency approval, with one goal being to evaluate sediment trends. Also, this section does not mention the U.S. EPA investigation that included Stage 1 aligned grid samples followed by Stage II radial step outs. For consistency purposes, it would seem that we would discuss the 2007-09 data in a similar level of detail.

Page 4 – Past Cleanup, BMP TCRA, 1st paragraph – The text identifies Bryant Mill Pond (BMP) as 71 acres. The BMP area is 29 acres; the site as a whole is 89 acres. Also, 150K cubic yards is an approximation, not an actual amount.

Page 5 – Plainwell Impoundment TCRA – Mention all the parties involved in the negotiations or at least signatories to the agreement.

Page 5 – Plainwell Impoundment TCRA – The text indicates a 30-foot-wide buffer was excavated. This is inaccurate. Instream material was excavated; the banks were cut back at either a 3:1 or 10:1 slope. At the edge of the cutback, a 30-foot buffer was added. This resulted in bank pullbacks of closer to 30 feet upstream of U.S. 131 and pullbacks of 150 feet near the dam.

Page 5 – Plainwell Impoundment TCRA – The text indicates, "Other floodplain areas with PCB concentrations exceeding 50 mg/kg also were excavated." This is inaccurate as it implies areas above 50 have all been removed. The existing data were used to identify areas above 50 and they were excavated. Unsampled areas still contain material in excess of a 50 mg/kg threshold.

Page 5 – Plainwell Impoundment TCRA, 3rd paragraph – The text states, "Between 2006 and 2011, adult fish tissue concentrations declined between approximately 2% and 10%." Carp and small mouth bass (SMB) have separate ranges; as such, the PP text is very generalized.

Page 5 – Plainwell No. 2 Dam TCRA, 1st paragraph – Text states, "The TCRA targeted riverbank soil, sediment in a portion of a historical oxbow channel, and soil in a floodplain area next to the oxbow." The description is missing a reference to the instream near the oxbow outlet. It should also be noted that only select riverbanks were targeted, and the remainder of the impoundment was not addressed. The text suggests more of a site-wide action.

Page 5 – The Footnote states, "EPA has concluded that groundwater is not a medium of concern at OU5." For Area 1 perhaps, but for the rest of the river, we could have issues with Groundwater if cleanups are limited and dam removals do not occur; keeping PCB impacted material saturated and in direct contact with the river could result in GSI exceedances.

Page 6 - Plainwell No. 2 Dam TCRA, 1st paragraph – The text states, "Similar to the earlier Plainwell Impoundment TCRA, a 30-foot-wide area of soils adjacent to the river was excavated in areas where PCB concentrations exceeded 5 mg/kg." Clarifications to the description of actions taken at the Plainwell section will help, but PD#2 did not perform instream and bank slope work, so the 30-foot excavation was different, generally narrower. Also, Plainwell did not just excavate bank areas above 5 ppm. All riverbanks in Plainwell were targeted. The 5 ppm criteria were simply used to determine that the PCB-containing layer had been removed.

Page 6 (same section) - Also, the text states, "Other floodplain areas with PCB concentrations exceeding 50 mg/kg also were excavated. The sediment performance standard goal was the same as for the Plainwell Impoundment TCRA (1 mg/kg)." For clarification, one small Floodplain area was excavated, and it is not clear if the sample result was above 50. Additionally, the sediment criteria were only used in one small area of the site near the Oxbow outlet.

Page 6 (same section) – The text states, "For fish tissue, the same data set was used for this reach of the river as for the Plainwell Impoundment, showing a decrease of approximately 2% and 10% for adult fish tissue concentrations between 2006 and 2011." PD#2 data are specifically available and should be used for descriptions. Suggest using the following language:

> For PD#2, post-TCRA wet-weight (ww) mean total PCB concentrations and percent lipids in adult carp, adult smallmouth bass, and young of year (YOY) smallmouth bass were lower compared to the 2009 pre-TCRA results. Post-TCRA lipid-adjusted mean PCBs for adult and YOY smallmouth bass are lower, whereas a slight increase was observed in adult carp.

Additional numeric descriptions are below:

> Mean total PCBs (in 2011) were 2.3 mg/kg ww in adult carp, 0.2 mg/kg ww in adult smallmouth bass, and 0.7 mg/kg ww in YOY smallmouth bass. While wet-weight PCB concentrations in adult carp and smallmouth bass have declined by roughly one-half, all samples are still above the MDCH four meal per month threshold (0.05 mg/kg ww). Ten of the 11 adult carp fillet samples still exceed the one meal per month trigger level and 4 samples exceed the no consumption (PCB > 2.7 mg/kg). Only three adult smallmouth bass exceed the one meal per month threshold (0.21 mg/kg ww) and seven samples exceed the two meal per month criteria (0.11 mg/kg ww). No adult smallmouth bass samples exceeded the no consumption criteria. Based on the current trend model, the time for the PD#2 Impoundment to reach PCB concentrations similar to Ceresco Reservoir is infinite for adult carp (not a decreasing trend), 9 years for adult smallmouth bass and 4 years for YOY smallmouth bass.

Or:

> For PD#2 fish, wet weight tissues concentrations decreased by a ~50% for carp and YOY SMB, with reductions of ~30% for adult SMB, between 2009 and 2011. Lipid adjusted fish tissue concentrations for carp increased slightly, while SMB young of year and adult adjust tissue levels decreased by ~30-50% over the same period.

Page 6 – PC TCRA, 2nd paragraph – The text states, "Post-removal monitoring to verify the effectiveness of the TCRA includes surface water monitoring, soil and sediment confirmation monitoring, fish tissue monitoring, and monitoring/maintenance of erosion

controls." It is not clear that any of the monitoring activities described in the report are being collected except for Surface Water samples.

Page 7 – Enforcement activities, 1st bullet - The text states, "Millennium put in place interim remedial measures at the Allied Paper property (OU1) that effectively controlled the OU1 landfill wastes from entering Portage Creek." This description sounds final and complete. These actions were only interim until a final remedy can be implemented, which has not yet occurred.

Page 7 - Area 1 RI/FS, Bullets – Make qualifying statements that the reports listed are only the major reports that are part of the Administrative Record. Many lesser reports have been developed and submitted.

Page 8 – Physical Characteristics, last paragraph – The text states, "Based on groundwater monitoring conducted as part of the Plainwell Impoundment TCRA, in conjunction with groundwater monitoring data from other site OUs and knowledge of the nature of the PCB contamination at the site, EPA has concluded that groundwater is not a medium of concern at OU5." This statement should be limited to Area 1. Monitoring may be part of long-term evaluation at other impoundments.

Page 8 – Sediment sampling, 1st Paragraph – Text states, "As part of the Phase I SRI, 128 locations along 16 transects were probed between Morrow Dam and Main Street, Plainwell." Based on our knowledge of the site, it is not clear what activity this text is describing. The report also appears to not include Plainwell sediment data descriptions, descriptions regarding the 2001 EPA data, nor descriptions regarding the 2005 "FIELDs" data.

Page 9 - Sediment sampling, 1st Paragraph – The text description sounds like a Floodplain description and not sediment. "Additional sampling was also conducted in the Plainwell No. 2 dam area. From this study area, 202 sediment samples from 47 sediment core locations were analyzed for PCBs, with concentrations ranging from ND to 42 mg/kg." Descriptions in the database and previous reports do not match up; for example, one sediment sample is at 100 ppm, which is not identified. Suggest using the following description from the approved SRI report (267 samples, 60 cores: range ND – 100), or the following description from our database query (258 samples from 57 cores: range ND – 100)

Page 9 – Distribution of PCBs in Sediment - The text describes the river as being in dynamic equilibrium. This is a term used by the USGS to refer to the dam impoundments that have been lowered to the sill. Also, the text describes Plainwell as non-depositional. This conceptualization is a bit simplistic and we do not really have data or studies to support determination.

Page 10 – Floodplain Soil Sampling Summary, 2nd paragraph - The text indicates, "The floodplain investigation during the original RI involved five Kalamazoo River floodplain

sampling transects established between the confluence of Portage Creek and the city of Allegan." This verbiage sounds inaccurate. In 1993, there were 5 transects from PC to the city of Allegan, but only 2 of the 5 were in Area 1 (one by Verburg Park and one by D Ave) with the data summarized in Tech Memo 3. One additional FP transect was also conducted along Portage Creek. Also in 1993/94, there were 6 transects performed in the former Plainwell Impoundment in the exposed sediment areas with the data summarized in Tech Memo 12. This sampling was followed up in 2001 by the EPA who determined that the data were inadequate in Plainwell for decision making and conducted sampling along an aligned grid and at radial step outs.

Page 11 – Floodplain Soil Sampling Summary, top of page – For consistency, the floodplain and instream data summaries should be consistent; perhaps with a chronological description of the work.

Page 13 – CSM, paragraph at top of page. – The text states, "PCB levels in fish are linked to concentrations in sediment through the food chain." Add surface water component as well.

Page 13 - The text states, "External sources of PCBs to Area 1 as well as background sources of PCBs from areas upstream of Area 1 are expected to sustain low levels of PCBs in fish tissue in the long term, even with control of known potential source areas associated with historical papermaking operations." "Known" potential sources have not been controlled. There are many potential sources that will not be addressed. The work at the site has included control high mass/high concentration deposits at the OUs and the required TCRA actions, usually above 50 ppm. There are many potential sources that will remain unaddressed at the site and long-term monitoring will be used to evaluate if the work elements were adequate.

Page 13 – Principal Threat Wastes – The text states, "The concentrations of PCBs at OU5 are considered to be low-level threat wastes." It is understood that this is legally correct, but the description may cause confusion about risk still being present at the site and that work is required to address the risk present.

Page 14 – Section 5, Contaminants of Concern – The word "collocated" is a rare usage. Preferred spellings are co-located, colocated, then collocated.

Page 15. It is suggested that the text in the section described below be modified as follows, or similar language, to acknowledge more recent information developed by CDM and the MDEQ in 2014 showing potential risks to human receptors consuming deer and waterfowl.

In addition to fish consumption by anglers, several other potential exposure pathways were described in the 2003 BHHRA that are relevant to Area 1, as described below. More recent risk evaluations, still in draft stage, suggest potential risks to receptors consuming deer:

Consumption of waterfowl: This exposure pathway was considered in the 2003 BHHRA. However, because of data limitations with waterfowl samples, a qualitative evaluation or quantify risk estimates for this exposure pathway were assessed. More recent evaluations, still under development, suggest potentially elevated risks to frequent consumers of waterfowl.

Consumption of deer meat and liver: More recent evaluations, still under development, suggest potentially elevated risks for moderate to frequent consumers of deer meat and liver.

Page 17 – middle of page – The text states, "thereby likely overestimating the risks." The BHHRA is a site-wide estimate. The TCRAs that have been conducted are small by comparison to the site as a whole. Change text to, "possibly overestimate," or remove the text altogether, as it is not necessary to make a note of this fact.

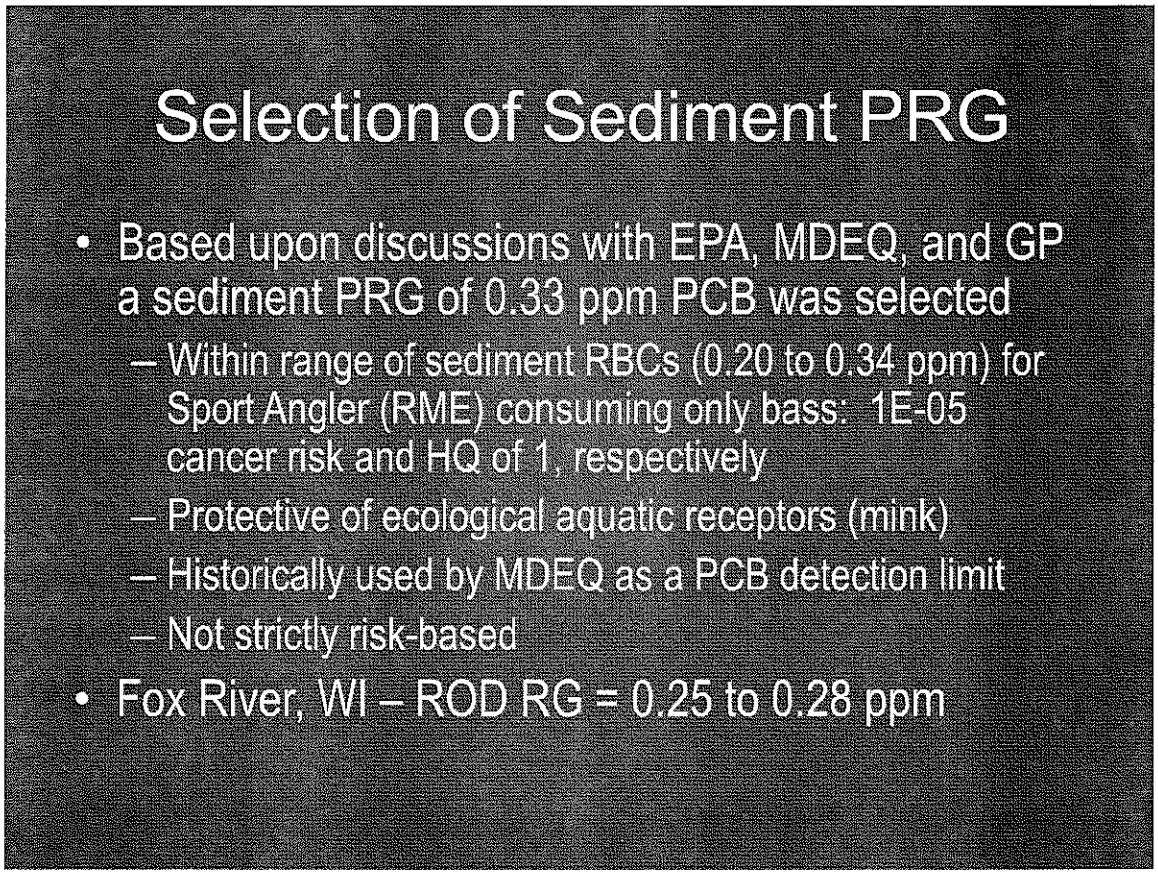
Page 19 – Summary of Area 1 TBERA – Add reference to Peer Review process.

Page 22 - Selection of Fish Tissue Preliminary Remediation Goals - Expand/add a statement to clarify that two upstream reference areas (Morrow and Ceresco) serving as background were also evaluated and that Morrow Lake small mouth bass average 0.14 ppm and Ceresco average 0.03 ppm.

Page 23 - Selection of Sediment PRGs - It would be useful to include an expanded discussion and table in support of the PRG of 0.33 as presented to the CSTAG in September as we can expect comments on the PRG selection process.

Sediment and Fish Tissue RBCs/PRGs

Exposure Scenario	Endpoint	Fish Ingestion Rate (g/d)	PRG: Bass Only (mg/kg)		PRG: Bass + Carp (mg/kg)		Comments
			Tissue	Sediment	Tissue	Sediment	
Sport Angler (CTE)	Risk	15	0.11	0.51	0.11	0.3	
	Hazard (HI)		0.19	0.88	0.19	0.52	
High End Sport Angler (RME)	**Risk**	**39**	**0.04**	**0.20**	**0.04**	**0.12**	**RME exposure assumptions based on survey data (West, 1989, 1993). Ingestion rate is about 10 meals/month (78 grams per day), with half of this consumption assumed to be fish from the site or about a meal per week**
	Hazard (HI)		**0.07**	**0.34**	**0.07**	**0.2**	
Subsistence Angler	Risk	110	0.015	0.07	0.015	0.04	Exposure assumptions consistent with angler that depends on fish for a substantial portion of dietary protein (about 15 meals/month)
	Hazard (HI)		0.025	0.12	0.025	0.07	



Rather than state the following:

"MDEQ conducted an independent evaluation and has recommended a sediment PRG of 0.33 mg/kg. MDEQ concluded that this PRG value is appropriate for sediment because it is sufficiently protective of the high-end sports angler. This PRG value also corresponds to MDEQ's historical PCB detection limit that has previously been used as a screening and target level in Michigan, and that has become a precedent value in the state for PCB site cleanup"

Modify to read as follows or use similar language:

A range of sediment PRGs for various fishing groups were developed (Table ___). PRGs of 0.20 (10-5 cancer risk) to 0.34 ppm (HI=1) were found to be protective of high-end (RME) sport angler. MDEQ's historical PCB detection limit of 0.33 ppm has previously been used as a screening and sediment target level in Michigan under Michigan's Natural Resources and Environmental Protection Act, Part 201. Based upon discussions with EPA and MDEQ an RBC of 0.33 ppm was selected, as it is sufficiently protective of the high-end sports angler.

Page 25 - Suggest modifying the language concerning the 50 ppm hot spot removal to read similar to that below. The concern is that placing emphasis on a TSCA number, which is not risk based and seldom used in recent Superfund sediment RODs, may inappropriately suggest that 50 ppm is an acceptable sediment target.

While alternatives have been developed evaluating the remediation of known hot spot areas (i.e., areas with multiple samples showing PCB concentrations greater than 50 mg/kg), it is recognized that sampling results may show that it will be necessary to target the remediation of sediments having concentrations lower than 50 ppm, to achieve or reasonably approach a post remedial sediment PRG of 0.33 ppm.

Page 26 – 7. Summary, Common Elements - Ecological monitoring may also be conducted, which could include collection of bird/egg samples.

Page 26 – Common Elements – 4th bullet – Language presupposes MDEQ continued involvement in the LTM program. Change wording to discuss the current work elements of the program, as LTM efforts are to be evaluated later in the process.

Page 26 – Common Elements – 5th bullet – The text states:

> The final components of the LTM program will be defined during the RD

Page 27 text states:

> A sampling plan for surface water, fish, and sediment would be developed and approved by EPA and would be implemented following the remedial action.

This RD vs RA timing difference caused confusion. Make the language that discusses defining LTM during RD consistent in the document.

Page 26 – 1st sub-bullet – The text states, "Fish monitoring annually for the first five years." These descriptions need to be updated as Small Mouth Bass will only be collected every 5 years and carp more frequently.

Page 28 – S-3A Alternative, 3rd Paragraph – Text states, "...layer cap addition would occur in approximately 50% of the area." The text should clarify that the cap would be put over 25% of the remedial area, and not all of Area 1.

Page 44 – Item 10 – The Fish Consumption Advisories are now called Eat Safe Fish guidelines by MDCH. Also, add language to the document to mention that MDCH is engaged in a process to update the fish signs posted along the river.

Page 45 – Sediment Alternatives, 2nd Paragraph – The text should make a distinction between Natural Recovery (the process) and Monitored Natural Recovery, which is an administrative process to monitor how these natural processes are affecting site contaminants.